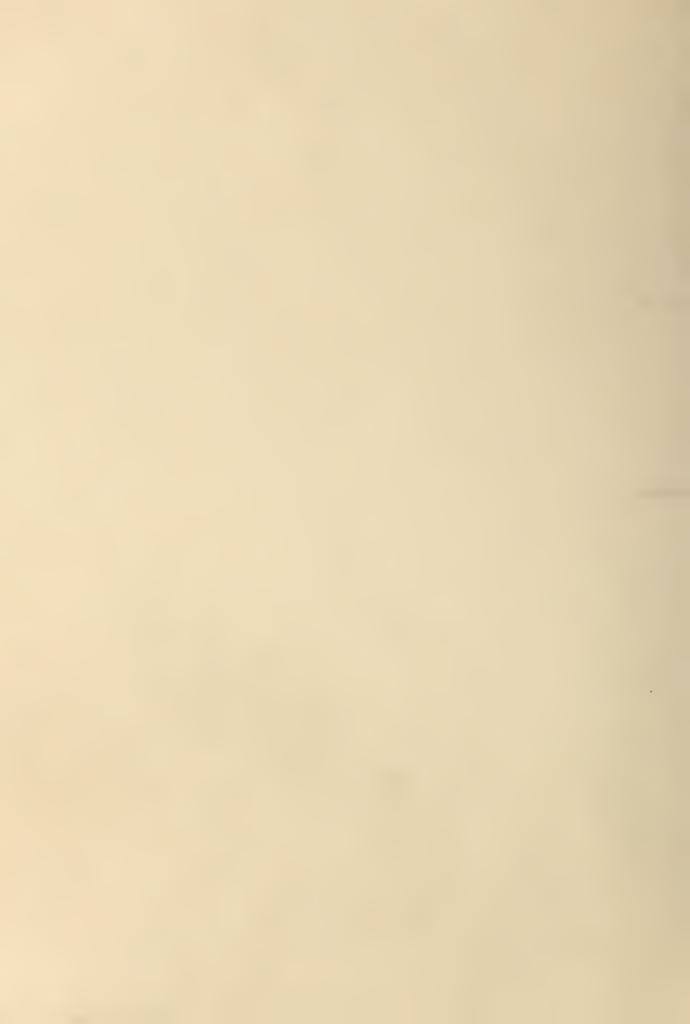
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.





WATER SUPPLY OUTLOOK

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS for

COLORADO and NEW MEXICO

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE and

COLORADO STATE UNIVERSITY
STATE ENGINEER of COLORADO
and STATE ENGINEER of NEW MEXICO

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, National Park Service and other Federal, State, and private organizations.

APR. 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

	TOBEISHED DI GOIL O	OHOEKVANION OEKVIOE	
REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEBMAY)	Portlano, Oregon	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR MAY)	PALMER, ALASKA	ALASKA S.C.D.
AR I ZON A	SEMI-MONTHLY (JAN.15 - APR.1)		SALT R. VALLEY WATER USERS ASSOC ARIZ. AGR. EXP. STATION
COLORADO ANO NEW MEXICO	MONTHLY (FEBMAY)	FORT COLLINS, COLORACO.	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
ГОАНО	MONTHLY (JANJUNE)	BOISE, TOAHO	. IOAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JANJUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVAOA	MONTHLY (JANMAY)	RENO. NEVAOA	NEVAGA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
ORE GON	MONTHLY (JAN. JUNE)	PORTLANO, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JANJUNE)	SALT LAKE CITY. UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEBJUNE)	SPOKANE, WASHINGTON	. WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEBJUNE)	CASPER, WYOMING	.WYOMING STATE ENGINEER
	PUBLISHED BY	OTHER AGENCIES	
REPORTS	ISSUED		AGENCY
BRITISH COLUMBIA	MONTHLY (FEB. JUNE)	WATER RIGHTS BR. NATURAL RESOURCES B.C., CANADA	, DEPT. OF LANDS, FORESTS AND B, PARLIAMENT BLOG., VICTORIA,
CALAGONIA	MONTHLY (FGO MAY)	COLUMN DEST OF W	MATER DESCRIPCES B O BOY 389

SACRAMENTO, CALIF.

FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

COLORADO RIVER, PLATTE RIVER ARKANSAS RIVER AND RIO GRANDE DRAINAGE BASINS

Issued

May 1, 1963

Report Prepared By
Jack N. Washichek, Snow Survey Supervisor
and
Don W. McAndrew, Assistant Snow Survey Supervisor
Fort Collins, Colorado

United States Department of Agriculture
Soil Conservation Service
and
Colorado Agricultural Experiment Station
Fort Collins, Colorado
and
State Engineer of Colorado
Denver, Colorado
and
State Engineer of New Mexico
Santa Fe, New Mexico

Issued By

Fred A. Mark
State Conservationist(Colo.)
Soil Conservation Service

Courtney A. Tidwell
State Conservationist (N. Mex.)
Soil Conservation Service

J. E. Whitten State Engineer State of Colorado

Sherman S. Wheeler, Director Colorado Agricultural Experiment Station

S. E. Reynolds State Engineer State of New Mexico

General Series Paper No. 783 Colorado Agricultural Experiment Station

WATER SUPPLY OUTLOOK FOR COLORADO AND NEW MEXICO as of MAY 1, 1963





SNOW PACK VARIES FROM 60 PERCENT OF NORMAL ON THE RIO GRANDE TO 88 PERCENT OF THE 15 YEAR AVERAGE ON THE UNCOMPANGE DRAINAGE.

STREAMFIOW IS EXPECTED TO RANGE FROM 65 TO 75 PERCENT OF AVERAGE OVER THE STATE FOR THE COMING IRRIGATION SEASON



STREAMFLOW IS EXPECTED TO 60 TO 88 PERCENT BELOW AVERAGE ON THE RIO GRANDE FOR THE COMING IRRIGATION SEASON. HEADWATER STREAMS ARE FORECAST 40 PERCENT BELOW THE 1943-57 NORMALS. THE PECOS AND CANADIAN DRAINAGE CAN EXPECT NEAR NORMAL IRRIGATION SEASON.

WATER SUPPLY OUTLOOK

THE MAP ON THIS PAGE INDICATES THE MOST PROBABLE WATER SUPPLY AS OF THE DATE OF THIS REPORT. ESTIMATES ASSUME AVERAGE CONDITIONS OF SNOW FALL, PRECIPITATION AND OTHER FACTORS FROM THIS DATE TO THE END OF THE FORECAST PERIOD. AS THE SEASON PROGRESSES ACCURACY OF ESTIMATES IMPROVE. IN ADDITION TO EXPECTED STREAMFLOW, RESERVOIR STORAGE, SOIL MOISTURE IN IRRIGATED AREAS, AND OTHER FACTORS ARE CONSIDERED IN ESTIMATING WATER SUPPLY. ESTIMATES APPLY TO IRRIGATED AREAS ALONG THE MAIN STREAMS AND MAY NOT INDICATE CONDITIONS ON SMALL TRIBUTARIES.

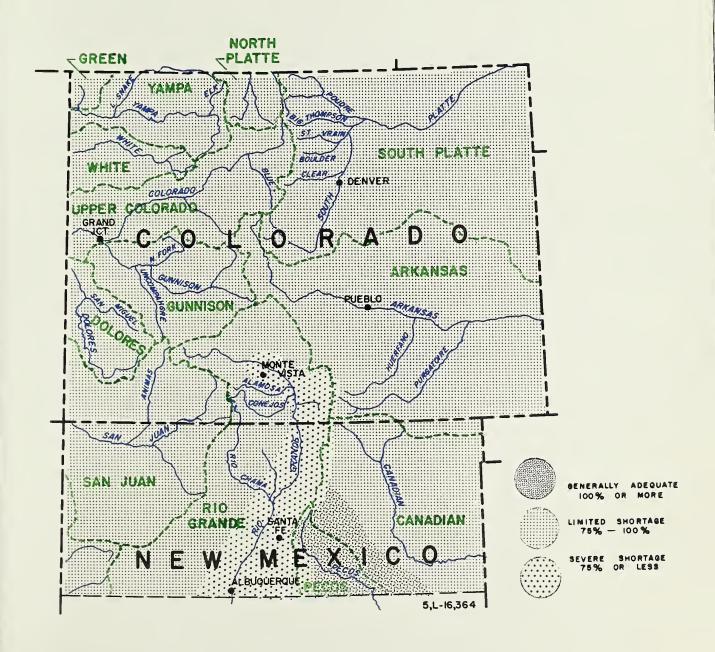


TABLE OF CONTENTS

WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS

WATERSHED I - SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Fort Collins, Big Thompson, Longmont, Boulder Valley, Jefferson, Teller-Park, Douglas County, Morgan, Kiowa, West Arapahoe, West Adams, East Adams, Platte Valley, Southeast Weld, and West Greeley Soil Conservation Districts.

WATERSHED II - ARKANSAS RIVER WATERSHED

Describes water supply conditions in Lake County, Upper Arkansas, Fremont, Custer County Divide, Fountain Valley, Black Squirrel, Horse-Rush Creek, Central Colorado, Turkey Creek, Pueblo, Bessemer, Olney Boone, Cheyenne, Upper Huerfano, Stonewall, Spanish Peaks, Purgatoire, Branson Trinchera, Western Baca County, Southeastern Baca County, Two Buttes, Bent, Timpas, Northeast Prowers, Prowers, West Otero, East Otero, and Big Sandy Soil Conservation Districts.

WATERSHED III - RIO GRANDE WATERSHED (COLORADO)

Describes water supply conditions in Rio Grande, Center, Mosca Hooper, Mt. Blanca, Sanches, and Culebra Soil Conservation Districts.

WATERSHED IV - RIO GRANDE WATERSHED (NEW MEXICO)

Describes water supply conditions in Lower Cebolla, Abiquiu-Vallecitos, Eastern Taos, Lindrith, Coyote-Canones, Espanola Valley, Pojoaque, Jemez, Santa Fe-Sandoval, Tijeras, Cuba, and Edgewood Soil Conservation Districts.

WATERSHED V - DOLORES, SAN JUAN, AND ANIMAS RIVERS WATERSHED

Describes water supply conditions in San Miguel Basin. Dove Creek, Dolores. Mancos, LaPlata, Pine River, San Juan, and Glade Park Soil Conservation Districts.

WATERSHED VI - GUNNISON RIVER WATERSHED

Describes water supply conditions in Delta, Gunnison, Cimarron, Shavano, and Uncompandere Soil Conservation Districts.

WATERSHED VII - COLORADO RIVER WATERSHED

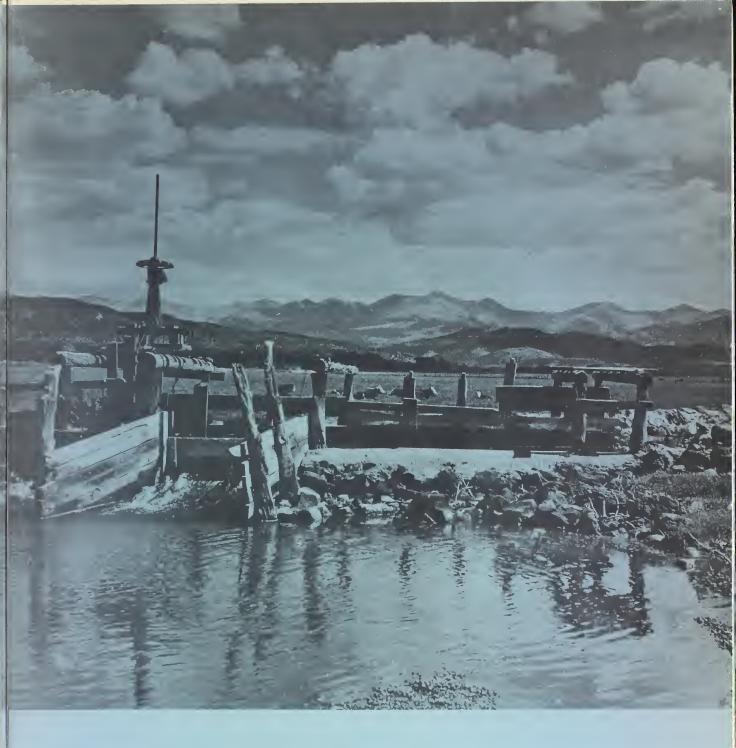
Describes water supply conditions in DeBeque, Lower Grand Valley, Bookcliff, Eagle County, Middle Park, Glade Park, Upper Grand Valley, Plateau Valley, South Side, and Mt. Sopris Soil Conservation Districts.

WATERSHED VIII - YAMPA, WHITE AND NORTH PLATTE RIVERS WATERSHED

Describes water supply conditions in Yampa, Moffat, West Routt, East Routt, North Park, Upper White River, Lower White River, and Douglas Creek Soil Conservation Districts.

WATERSHED IX - LOWER SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Sedgwick, South Platte, Haxton, Peetz, Padroni, Morgan Rock Creek and Yuma Soil Conservation Districts.



Hints for Conserving

Your Irrigation Water

R.D. Anderson, Colorado Soil Conservationist

YOUR 1963 WATER SUPPLY

STREAMFLOW WATER SUPPLIES FOR IRRIGATION THIS YEAR WILL BE BELOW NORMAL IN MANY AREAS. IT IS IMPORTANT THAT YOU USE YOUR IRRIGATION WATER AS EFFICIENTLY AS POSSIBLE. BEFORE CROP PLANTING GETSUNDER WAY, FIND OUT FROM YOUR IRRIGATION COMPANY ABOUT HOW MUCH WATER YOU ARE LIKELY TO RECEIVE AND FOR HOW LONG OVER THE SEASON IT WILL BE AVAILABLE. KNOW HOW MUCH WATER IS DELIVERED TO YOUR FARM.

HERE ARE SOME SUGGESTIONS THAT WILL HELP:

IRRIGATION SYSTEMS

- 1. Keep ditches clean.
- 2. Replace leaky, worn-out structures such as gates and turnouts.
- 3. Use short lengths of run.
- 4. Combine streams on the farm and irrigate with larger heads of water. Reduce heads when water reaches lower end of field.
- 5. Allow as little waste water as possible. If some waste or tail water is necessary, try to re-use it.

CROPS

- 1. Give first priority to established perennial crops such as alfalfa, hay, pasture, orchards, etc.
- 2. Adjust downward acreages of high water requirement crops such as beets, potatoes, onions and corn.
- 3. Replace some acreages of high water requirement crops with those needing lesser water.

MANAGEMENT

- 1. If water supply is too short for the whole acreage, concentrate it on the best land.
- 2. Maintain high fertility on those crops for which irrigation water is available.
- 3. Use shovel or soil auger to determine when to irrigate. Apply only the amounts needed to fill the root zone by checking with a shovel or auger as you irrigate.
- 4. Cultivate only as often as necessary to control weeds. Where possible, use chemicals to control weeds.

WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

SOUTH PLATTE RIVER WATERSHED IN COLORADO

as of

APRIL 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



WATER CONTENT OF THE MOUNTAIN SNOW PACK THROUGH-OUT THE SOUTH PLATTE WATERSHED AVERAGES 78% OF THE 1943-57 AVERAGE. THE SNOW PACK THIS YEAR DIDN'T IN-CREASE AS IT USUALLY DOES DURING MARCH. MANY OF THE SNOW COURSES BELOW 10,000 FEET OF ELEVATION DECREASED DURING LAST MONTH. HIGH ELEVATION COURSES ARE PRESENT-LY ABOUT 80% OF AVERAGE.

SOIL MOISTURE



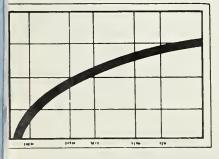
WATERSHED SOILS AT THE HIGH MOUNTAIN ELEVATIONS REMAIN DRIER THAN NORMAL. THIS CONDITION DOES NOT IMPROVE THE BELOW NORMAL STREAMFLOW ANTICIPATED THIS COMING SEASON.

RESERVOIR STORAGE



CARRYOVER STORAGE IN THE UPPER SOUTH PLATTE AREA CONTAINS AN ABOVE NORMAL AMOUNT OF WATER FOR THIS DATE. THIS EXCELLENT SUPPLY OF WATER WILL GREATLY HELP TO ALLEVIATE THE ANTICIPATED BELOW NORMAL STREAMFLOW THIS YEAP.

EXPECTED STREAMFLOW



STREAM FLOW FOR THE PERIOD APRIL THROUGH SEPTEMBER 1963 IS EXPECTED TO RANGE FROM 73% OF NORMAL ON THE SAINT VRAIN TO 86% ON THE BIG THOMPSON. FORECASTS AS OF 1HIS DATE ARE BASED ON AVERAGE SNOWFALL AND PRECIPITATION DURING THE COMING MONTHS.

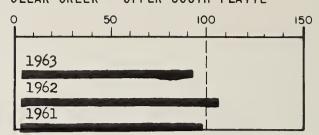
"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"
ISSUED BY: SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

CACHE LA POUDRE - BOULDER



CLEAR CREEK - UPPER SOUTH PLATTE



RESERVOIR STORAGE (1,000 AC. FT.)

SOIL MOISTURE

		MEASUR	ED FIRST OF	MONTH			10 1 0	RE	
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57	STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Antero	33.0	15.7	15.7	14.4	Alpine Camp	6.9	3.1	4.7	3.5
Barr Lake	32.2	23.4	24.9	21.3	Beaver Dam	7.1	3.2	5.2	3.4
Black Hollow	8.0	4.1	5.1	3.4	Clear Creek	9.5	4.4	7.0	5.3
Boyd Lake	44.0	40.6	4.1	17.5	Feather	10.1	4.1	5.3	4.1
Cache La Poudr		8.7	8.6	6.6	Guard Station		2.9	4.1	3.5
Carter Lake *	108.9	97.7	102.6	64.8*	Hoop Creek	4.9	2.8	3.5	2.4
Chambers Lake	8.8	1.7	6.6	2.1	Hoosier Pass	7.8	4.1	6.0	4.2
Cheeseman	79.0	44.6	77.9	49.2	Kenosha Pass	4-4	2.3	2.3	1.9
Cobb Lake	34.3	18.9	20.4	5.6	Laramie Road	12.4	6.0		6.6
Eleven Mile	81.9	97.3	97.8	69.2	Two Mile	9.1	4.2	6.6	5.3
Fossil Creek	11.6	10.0	8.5	7.1				İ	
Gross	43.1	25.2	32.0						
Halligan	6.4	5.1	4.6	2.0					
Horsetooth *	143.5	117.9	135.1	99.4*					
Lake Loveland	14.3	12.3	7.8	5.7	AI	LL PROFILI	e 4 ccc	Deep	ł.
Lone Tree	9.2	7.9	7.3	6.5	AI	JL PROFILI	23 4 F E E I	DEEP	
Mariano	5.4	5.2	4.8	2.6					
Marshall	10.3	0.9	7.1	2.2					
Marston	18.9	14.1	15.6	14.7					
Milton	24.4	16.0	14.2	10.8					
Standley	18.5	9.0	14.5	10.9					
Terry Lake	€.2	5.8	5.9	4.4	STREAMFL	OW FC	OR EC.	AST	
Union	12.7		12.0	6.9					
Windsor	18.6	14.3	14.0	9.8	(1,000		· ·		
*Shorter Perio	bc			APRIL THROUGH SEPTEMBER FORECAST THIS					

PRECIPITATION

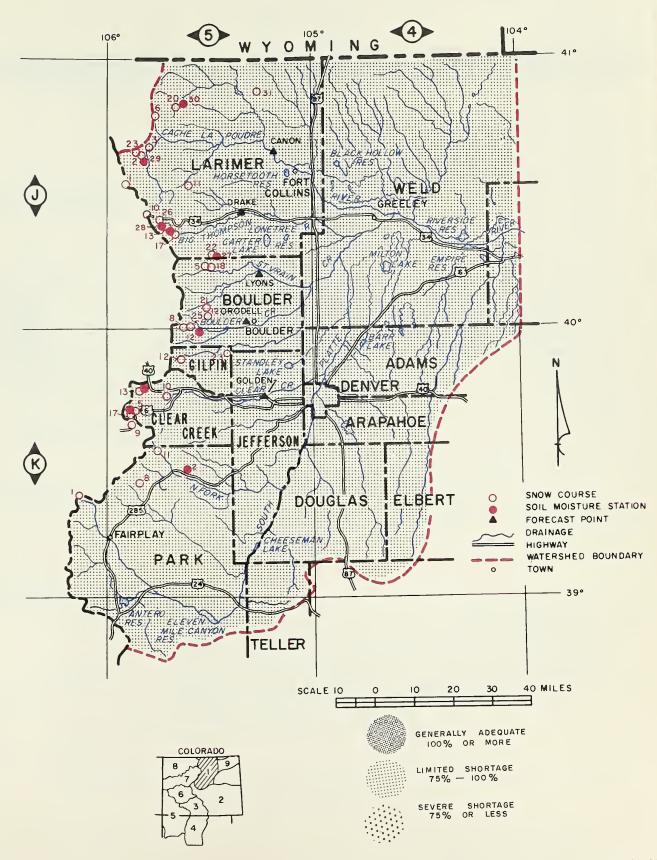
STATION	AUGUST T NOVEM AVE.		winter Ave Dec-Mab		
Upper South Flatte	2.28	-2.5	5 1.46	33	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

APRIL THROUGH SEPT	EMB	ER		
STREAM AND STATION	AF	ECAST PRIL - EPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57
Big Thompson at Drake (2 Boulder at Orodell Cache La Poudre at Canon Clear Creek at Golden (3 Saint Vrain at Lyons	(1)	91 45 146 114 61	82 77 83	

- (1) Observed flow minus diversions from Michigan, Colorado and Laramie rivers, plus diversions for irrigation and municipal use above station.
- (2) Observed flow plus by-pass to power plants.
- (3) Observed flow minus diversions through Jones Tunnel.

SOUTH PLATTE RIVER WATERSHED IN COLORADO



SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTROL	
SOUTH PLATTE RIVER AND TRIBUTARIES Baltimore Berthoud Falls Big South Boulder Falls Cameron Pass Chambers Lake Copeland Lake Deadman Hill Deer Ridge Empire Geneva Park Grizzly Peak (B) Hidden Valley Hoosier Pass Hour Glass Lake Jefferson Creek Lake Irene (B) Long's Peak Lost Lake Loveland Pass Loveland Lift No. 1 Pine Creek Red Feather Two Mile University Camp Ward Wild Basin	5K23 5K13 5J25 5J125 5J18 5J6 5J17 5K10 5K11 5K9 5J13 6K1 5J11 5K8 5J10 5J22 5J23 5K5 5K24 5J21 5J26 5J26 5J26 5J26 5J27	3-01 3-01 3-30 3-30 3-27 3-30 3-29 4-01 3-28 3-20 3-27 3-28 3-28 3-30 3-27 3-28 3-30 3-27 3-29 3-27 3-29 3-27 3-29 3-27 3-29 3-27 3-29 3-27 3-29 3-27 3-29 3-27 3-29 3-27 3-29 3-20 3-21 3-20 3-21 3-20 3-27 3-29 3-20	16 28 5 36 54 22 10 39 17 8 50 35 33 25 52 30 39 62 33 44 22 36	5.4 10.8 2.4 13.6 20.1 7.9 3.2 13.1 4.5 5.9 2.2 16.4 10.0 9.1 6.3 7.0 17.5 10.1 10.5 12.0 18.9 0.9 6.1 13.2 16.1 7.3 9.6	9.1 13.2 2.1 12.5 38.9 10.1 4.0 17.2 9.4 9.7 21.3 16.1 15.3 6.9 11.7 31.7 11.8 13.1 19.2 30.7 2.3 7.6 23.3 21.5 6.8 10.1	14.6* 2.7 15.4* 24.9 8.8 5.3* 16.8 5.9* 7.8* 4.2* 18.9 12.4 13.1 9.2 9.8 22.9 11.7* 11.8* 15.8 8.8 15.3* 24.5 7.1*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
Jack N. Washichek and Don W. McAndrew
Soil Conservation Service
Colorado State University
Ft. Collins, Colorado

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UNITED STATES

DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

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WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

ARKANSAS RIVER WATERSHED IN COLORADO

as of

APRIL 1, 1963

. U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER ON THE ARKANSAS DRAINAGE HAS NOT IM-PROVED DURING THE LAST MONTH. CURRENTLY SNOW COVER IS ABOUT 72% OF NORMAL. THIS IS NOT ENOUGH SNOW TO PROVIDE WATER FOR THE IRRIGATED AREAS BELOW. SNOW AT THE LOWER ELEVATIONS IS RAPIDLY DISAPPEARING.

SOIL MOISTURE



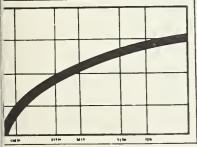
SOIL MOISTURE CONDITIONS ARE STILL POOR. ALL HIGH ELEVATIONS STATIONS INDICATE SOIL MOISTURE CONDITIONS ARE MUCH BELOW NORMAL. THIS CONDITION WILL TEND TO PRODUCE LESS RUNOFF THAN COULD BE NORMALLY EXPECTED FROM THE SNOW PACK. VALLEY SOILS ARE REPORTED AS ONLY FAIR.

- RESERVOIR STORAGE



RESERVOIR STORAGE ONLY ADDS TO THE ALREADY DISMAL PICTURE. STORAGE IN THE MAJOR RESERVOIRS IN THE BASIN ARE LESS THAN ONE-HALF NORMAL FOR THIS DATE. JOHN MARTIN DOES NOT CONTAIN ENOUGH WATER TO BE OF MAJOR BENEFIT.

EXPECTED STREAMFLOW



FORECASTED FLOWS OF MOUNTAIN STREAMS ASSUME THAT SUMMER RAINFALL WILL BE NORMAL. IF THIS IS THE CASE THIS YEAR, SHORTAGES WILL OCCUR ON THE MAIN STEM OF THE ARKANSAS AND ALL TRIBUTARIES. THE SHORTAGE OF STREAM FLOW WILL BE FELT EVEN MORE SEVERELY BECAUSE OF POOR CARRYOVER STORAGE IN THE MAJOR RESERVOIRS AND POOR SOIL MOISTURE CONDITIONS.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

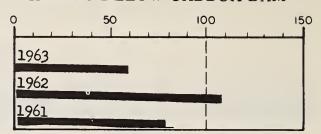
ISSUED BY: SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

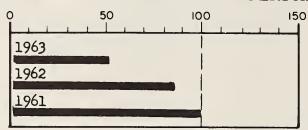
ARKANSAS ABOVE CADDOA DAM

50 100 150 1963 1962 1961

ARKANSAS BELOW CADDOA DAM



PURGATOIRE - CUCHARAS - HUERFANO



RESERVO	IR STORA	\GE (1,0)	00 AC. 1	FT.)

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57
Adobe Creek Clear Creek Cucharas Great Plains Horse Creek John Martin Meredith Model Sugar Loaf Twin Lakes	61.6	0.0	0	22.0
	11.4	8.6	10.4	5.8
	40.0	0.0	8.0	4.5
	150.0	11.6	39.9	50.8
	26.9	1.6	12.3	7.3
	366.6		34.0	58.8
	41.9	9.5	26.0	14.5
	15.0	3.4	4.8	2.5
	17.4	6.6	10.8	8.1
	57.9	23.1	30.6	22.7

PRECIPITATION

STATION	AUGUST THROUGH NOVEMBER AVE. DEP.		winter AV Dec-Peb		
Arkansas	2.96	-2.52	2.01	29	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

MEASURED FIRST OF MONTH

SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Garfield King LaVeta Pass Leadville Twin Lakes Tunnel	6.7 3.3 11.9 7.8 4.5	2.3 1.5 6.2 3.4 1.4	3.9 2.1 11.5 3.7 2.9	3.1 1.6 10.0 3.1 2.5

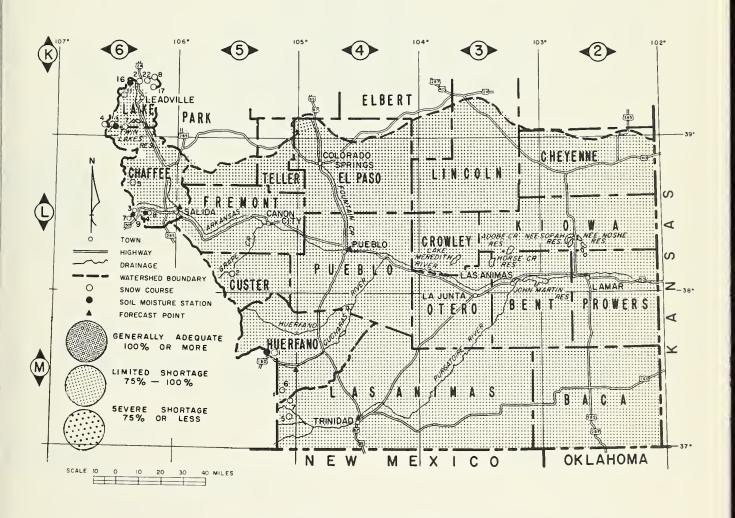
ALL PROFILES 4 FEET DEEP

STREAMFLOW FORECAST (1,000 AC. FT.)

APRIL THROUGH SEPTEMBER						
STREAM AND STATION	FORECAST APRIL - SEPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57			
Arkansas at Pueblo (1) Arkansas at Salida (1) Cucharas near LaVeta Purgatoire at Trinidad	235 230 10 31	69 68 71 60	342 339 14 52			

(1) Observed flow plus change in storage in Clear Creek, Twin Lakes, and Sugar Loaf Reservoirs minus diversions through Busk-Ivanhoe and Twin Lake Tunnels and Ewing, Fremont Pass, Wurtz and Columbine Ditches.

ARKANSAS RIVER WATERSHED IN COLORADO





SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE LAST YEAR	
ARKANSAS RIVER Blue Lakes Bigelow Divide Bourbon Cooper Hill Cucharas Pass East Fork Four Mile Park Fremont Pass Garfield LaVeta Pass (B) Monarch Pass St. Elmo (A) Tennessee Pass Tomichi Twin Lakes Tunnel Westcliffe	5M6 5L3 5M5 6K23 5M7 6K17 6K8 6L8 5M1 6L4 6L5 6K2 6L7 6K3 5L2	3-30 3-28 3-26 3-27 NS 3-28 3-28 3-28 3-28 3-29 3-28 4-02 3-28	0 19 14 38 26 12 43 34 17 42 37 38 35 23 6	0.0 5.1 3.6 6.7 8.5 2.1 12.7 11.5 5.6 13.9 9.3 8.4 12.2 7.1 1.8	5.9 6.7 14.1 11.2 8.0 21.1 18.4 9.2 22.7 17.4 12.8 14.4 18.5 4.7	 9.9* 4.0 16.9 8.1 18.6 12.5* 10.0 10.9 6.0*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
Jack N. Washichek and Don W. McAndrew
Soil Conservation Service
Colorado State University
Ft. Collins, Colorado

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WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

UPPER RIO GRANDE WATERSHED IN COLORADO as of

APRIL 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW FALL ON THE UPPER RIO GRANDE WATERSHED WAS FAR BELOW NORMAL FOR THE MONTH OF MARCH. THIS CONDITION BROUGHT THE SNOW PACK DOWN TO 64% OF NORMAL. MUCH OF THE SNOW PACK IS COVERED WITH SOIL DEPOSITED BY A MID-MONTH DUST STORM. THIS CONDITION WILL TEND TO INCREASE THE RATE OF MELT THIS SPRING SEASON.

SOIL MOISTURE



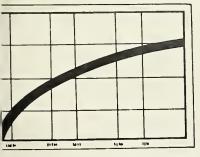
LOW ELEVATION SOIL MOISTURE STATIONS ARE RAPIDLY BECOMING SATURATED AS THE SNOW BEGINS TO MELT. HIGHER ELEVATIONS STATIONS ARE REMAINING BELOW NORMAL FOR THIS DATE. SMALL STREAMS BEGAN TO RISE BY THE LAST OF MARCH.

RESERVOIR STORAGE



WATER HELD IN STORAGE IN RESERVOIRS LOCATED IN THE HEADWATER AREAS ARE CURRENTLY BELOW NORMAL, AND BELOW THAT OF LAST YEAR. THIS SITUATION DOES NOT IMPROVE THE ALREADY WATER SHORTAGES ANTICIPATED.

EXPECTED STREAMFLOW

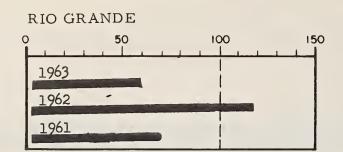


SOME RATHER SEVERE SHORTAGES CAN BE EXPECTED IN THE SUMMER. FORECASTS ARE GENERALLY IN THE LOW 60% OR HIGH 50%. THIS IS NOT ENOUGH WATER TO MEET ALL DEMANDS. HEAVY PUMPING WILL ALLEVIATE SOME OF THE SHORTAGE.

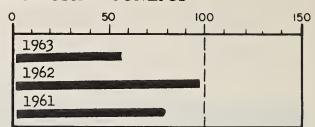
"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

ISSUED BY: SOIL CONSERVATION SERVICE

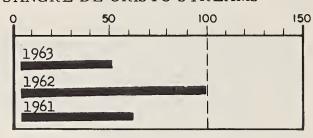
WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE



ALAMOSA - CONEJOS



SANGRE DE CRISTO STREAMS



RESERVOIR STORAGE (1,000 AC. FT.)

RESERVOIR	USABLE CAPACITY	THIS YEAR	LA5T YEAR	15 YEAR AVERAGE 1943 - 57
Continental Platoro Rio Grande Sanchez Santa Maria Terrace	26.7	4.5	6.2	7.8
	60.0	4.0	3.4	4.6
	45.8	11.2	12.8	12.6
	103.2	7.0	12.5	9.9
	45.0	4.5	4.2	7.8
	17.7	3.7	8.2	3.0

MEASURED FIRST OF MONTH

PRECIPITATION

STATION	AUGUST 1 NOVEN AVE.		WINTER AVE. DEP.		
Rio Grande (Colo.)	4.97	-1.47	3.94	-1.75	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

SOIL MOISTURE

STREAMFLOW FORECAST (1,000 AC. FT.

STATION	CAPACITY (INCHES)	THIS YEAR	I LAST I	AVERAGE ALL PAST DATA)
Alberta Park Bristol View LaVeta Pass Mogote	8.2 6.1 11.9 10.7	4.1 4.3 6.2 6.8	5.5 11.5 10.6	10.0

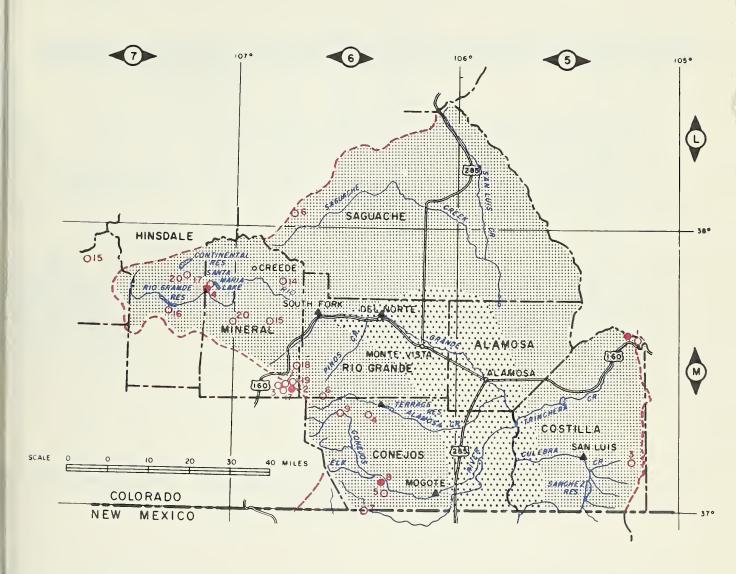
ALL PROFILES 4 FEET DEE!

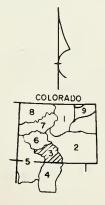
APRIL THROUGH SEPTEMBER						
STREAM AND STATION	FORECAST APRIL - SEPT.		AVERAGE 1943-57			
Alamosa above Terrace Conejos near Mogote Culebra at San Luis (2) Rio Grande nr. D.Norte(1) Rio Grande at 30Mi.Bdg(1) South Fork at South Fork		58 63 63 55 70 66	71 197 24 491 112 121			

⁽¹⁾ Observed flow plus change in storage in Santa Maria, Rio Grande, and Continental Reservoir

⁽²⁾ Observed flow plus changes in storage in Sanchez Reservoir.

UPPER RIO GRANDE WATERSHED IN COLORADO







SNOW		CURRENT INFORMATION PAST RECORD				
SNOW COURSE NO	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CO (INCHE	
Hiway Lake Humphreys Pass Creek Pool Table (A) Porcupine (A) Red Mountain Pass (B) Santa Maria Upper Rio Grande Wolf Creek Pass Wolf Creek Summit (B) ALAMOSA RIVER Silver Lakes Summitville (A) CONEJOS RIVER Cumbres Pass 6M	M6 M7 M9 M5 M6 M7 M3	3-27 3-29 3-26 3-29 3-26 3-27 3-27 3-29 3-29 3-29 3-27 3-27 3-28 3-30 NS 3-28 3-27	20 52 11 17 15 29 80 3 15 55 64 40 41 33 6 0 26 17	5.2 16.0 3.4 3.6 3.8 8.5 26.2 0.8 3.3 18.3 20.0 1.6 12.0 13.9 11.8 1.9	5.7 33.7 11.3 17.7 15.6 21.1 39.0 6.1 12.1 40.8 38.1 9.5 29.9 26.8 34.6 9.2	5.4* 6.3* 6.2* 12.7* 30.3* 4.7 7.3 30.5 29.5* 6.1 20.5 20.2 18.7* 7.3

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
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RIO GRANDE WATERSHED IN NEW MEXICO

APRIL 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SOME STRANGE THINGS ARE OCCURING TO THE SNOW PACK IN NEW MEXICO. THE SNOW FALL IN THE SANTA FE DRAINAGE IS FAR ABOVE NORMAL WHILE MOST OTHER AREA ARE EITHER JUST NORMAL OR BELOW. UNFORTUNATELY THE SANTA FE DRAINAGE WILL NOT ADD MATERIALLY TO THE FLOW OF THE RIO GRANDE. THE SNOW COVER AS A WHOLE IS ONLY 77% OF NORMAL.

SOIL MOISTURE



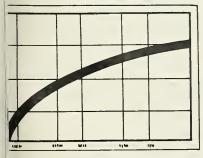
LOW ELEVATION SNOW IS MELTING RAPIDLY. THE LOWER SOIL MOISTURE STATIONS INDICATE SOIL ARE BECOMING SATURATED. RIVERS SHOULD START TO RISE SHORTLY. HIGH ELEVATION STATIONS REMAIN SLIGHTLY BELOW NORMAL.

- RESERVOIR STORAGE



CARRYOVER STORAGE ON THE MAIN STEM OF THE RIO GRANDE ARE BELOW NORMAL FOR THIS DATE, BUT SLIGHTLY BETTER THAN LAST YEAR. STORAGE ON THE PECOS AND CANADIAN DRAINAGES IS GOOD AND WILL BE OF GREAT VALUE THIS SUMMER.

EXPECTED STREAMFLOW



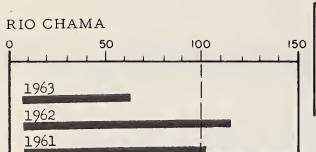
MAJOR SHORTAGES WILL OCCUR ON THE RIO GRANDE AND IT'S TRIBUTARIES. UPSTREAM FORECASTS ARE FOR ONLY 60% OF NORMAL, WHILE DOWN STREAM FORECASTS RAPIDLY DIMINISH UNTIL ONLY A TRICKLE WILL FLOW IN THE RIO GRANDE BY THE TIME IT ARRIVES AT ELEPHANT BUTTE. FORECASTS ARE BASED ON AVERAGE PRECIPITATION FOR THE REMAINDER OF THE SEASON. IF GOOD PRECIPITATION SHOULD OCCUR DURING THE SUMMER MONTHS SOME RELIEF CAN BE EXPECTED. PECOS DRAINAGE SHOULD FLOW NEARLY NORMAL.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

ISSUED BY: SOIL CONSERVATION SERVICE

RESERVOIR STORAGE (1,000 AC. FT.)

RESERVOIR		USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57
	Alamorgordo Caballo Elephant Butte El Vado McMillan-Avalo Red Bluff(Tex) Conchas	194.5 n 44.5 307.0 600.0	61.0 41.7 393.6 4.9 31.5 29.3 200.5	85.0 69.2 347.3 2.5 34.0 — 269.9	47.4 155.7 581.2 34.9 13.7 81.1 262.5
		MEASURED F	IRST OF MON	ITH	



PRECIPITATION

			De c	i-reb_	
STATION	AUGUST T NOVEN AVE.		WINTER AVE. DEP.		
Lower Rio Grande Middle Rio Grande Upper Rio Grande	4.63 5.48 4.97	19	1.35 2.31 3.94	+.59 33 -1.75	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

1963

SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Alberta Park(Colo)	8.2		max 6100	4.3
Aqua Piedra	7.2	5.1	5.1	4.7
Bateman	6.7	3.4	3.4	2.7
Big Tesuque	3.7	2.3	2.3	2.4
Bristol View (Colo)	6.1	5.5	5.5	3.4
Chamita (New Mex)	8.0	5.4	5.4	5.4
Fenton Hill	6.5			
Mogote (Colo)	10.7	10.6	10.6	6.1
Red Summit	4.8	2.1	2.1	2.1
Rio En Medio	3.5	1.1	1.1	1.5
Taos Canyon	3.3	3.2	3.2	2.9

ALL PROFILES 4 FEET DEEP

MIDDLE RIO GRANDE

UPPER RIO GRANDE

1961

)	1.1	50)	100	1	150
	1963					
	1962					
	1961					

STREAMFLOW FORECAST (1,000 AC. FT.)

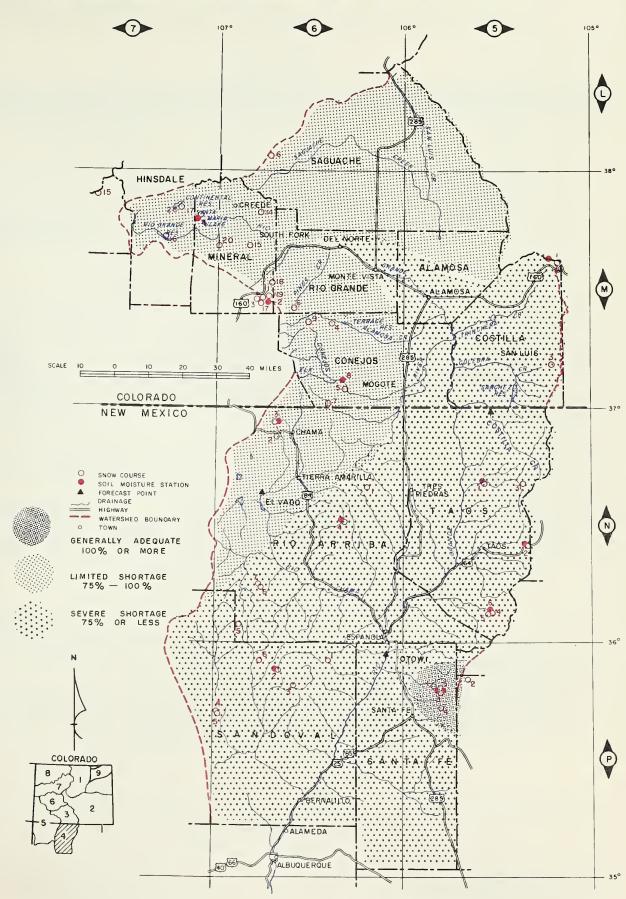
	LOWER	RIO GRA	ANDE		
C		50		100	150
	70/0		<u> </u>		
	1963			1	
	1962				
	1961				

APRIL THROUGH SEP	LINDLIN		
STREAM AND STATION	FORECAST APRIL - SEPT.		AVERAGE 1943-57
Costilla at Costilla Pecos at Pecos Rio Chama nr. La Puenta Rio Grande at Otowi (10)* Rio Grande at San Marchia (10)*		63 94 60 36 12	27 48 210 633 434

Rio Grande at San Marcial is Forecast at 8% of the Elephant Butte Irrigation District's Normal.

- (10) Observed flow plus changes in storage in Santa Maria, Rio Grande, Continental, Terrace, Sanchez, Platoro and El Vado Reservoirs.
 - * Rio Grande at Otowi and Rio Grande at San Marcial Forecast and Average Mar-July inclusive.

RIO GRANDE WATERSHED IN NEW MEXICO



SNOW		CURRE	NT INFORMA	TION	PAST F	ECORD
SNOW COURSE	NO.	DATE	SNOW DEPTH	WATER CONTENT	WATER C (INCHE	ES)
		SURVEY	(INCHES)	(INCHES)	LAST YEAR	AVERAGE 1943 - 57
RIO CRANDE						
Culebra (Colorado)	5M13	3-28	26	6.6	9.6	9.9
Cumbres Pass	6M7	3-27	41	13.9	26.8	20.2
LaVeta Pass	5M1	3-27	17	5.6	9.2	8.1
Platoro	6 M 9	3-27	33	11.8	34.6	18.7
River Springs	6M5	3-28	6	1.9	9.2	7.3
Santa Maria	7M17	3-30	3	0.8	6.1	4.7
Silver Lakes	6M4	3-30	5	1.6	9.5	6.1
Summitville	6M6	Est.	40	12.0	29.9	20.5
Upper Rio Grande	7M16	3-27	15	3.3	12.1	7.3
Wolf Creek Pass	6M1	3-29	55	18.3	40.8	30.5
Aspen Grove (New Mexico)	5P1	3-26	17	7.1	5.8	2.7
Bateman	6N4	3-27	35	10.3	12.5	11.9
Big Tesuque	5P3	3-26	16	6.0	5.6	4.5
Blue Bird Mesa	6P6	3-29	5	1.6		
Capuline Peak	6N6	3-29	11	3.8		
Chama Divide	6N2	3-28	0	0.0	3.5	1.7
Chamita	6N3	3-27	17	6.4	10.5	8.5
Cordova	5N5	3-27	35	9.7	13.3	11.1
Elk Cabin	5P4	3-29	5	2.0	3.2	2.4
Fenton Hill	6P2	NS				2.3
Hematite Park	5N3	3-28	8	2.0	5.5	4.4
Pajarito Peak	6P4	3-29	0	0.0		
Panchuela	5P2	3-29	4	1.3	4.1	1.4
Payrole	6Nl	3-29	10	3.1	9.3	7.9
Philmont	5N6	NS				
Quemazon	6Pl	3-26	30	8.0	12.3	5.7
Red River	5N1	3-28	18	4.7	9.4	6.9
Rio En Medio	5P5	3-26	33	11.7	10.5	5.8
Sandoval	6P3	3-26	14	4.7		
Taos Canyon	5N2	3-28	10	3.5	7.9	5.1
Tres Ritos	5N4	3-26	15	5.9	7.1	4.2
NOTE: * - 1943 - 57 (ADJUSTED AVERAGES) NS - NO SURVEY (A) - AIR OBSERVED (B) - ON ADJACENT DRAINAGE						

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WATER SUPPLY OUTLOOK
FOR THE SOIL CONSERVATION DISTRICTS IN THE

SAN MIGUEL - DOLORES - ANIMAS - SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO

as of

APRIL 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER RANGES FROM 65% OF NORMAL ON THE SAN JUAN DRAINAGE TO 83% ON THE DOLORES. THE DOLORES HAS THE BEST BASIN SNOW PACK IN THE STATE. LAST MONTH SNOW FALL WAS SLIGHTLY BELOW NORMAL. PRACTICALLY ALL HOPE OF A NORMAL SNOW COVER IS GONE.

SOIL MOISTURE



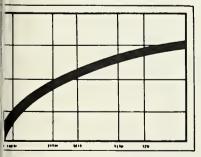
SOIL MCISTURE AT THE LOW ELEVATION IS NOW COMING UP. THIS INDICATES THAT RUNOFF ISN'T FAR BEHIND. THE HIGHER ELEVATION STATIONS ARE STILL DRY AND NO MELT HAS TAKEN PLACE. HIGH ELEVATION SOIL MOISTURE STATIONS HAVE BEEN BELOW NORMAL ALL YEAR.

RESERVOIR STORAGE



RESERVOIR STORAGE HAS BEEN SLIGHTLY ABOVE NORMAL ALL YEAR PRINCIPALLY BECAUSE OF VALLECITO. THIS RESERVOIR NOW CONTAINS 55,300 ACRE FEET. GROUNDHOG IS NOT BELOW NORMAL WITH 5,500 ACRE FEET COMPARED TO A NORMAL OF 7,000 ACRE FEET.

EXPECTED STREAMFLOW



EXPECTED RUNOFF FROM THE HIGH MOUNTAIN AREAS WILL RANGE FROM 69% OF NORMAL ON PIEDRA CREEK TO 82% OF THE 15 YEAR AVERAGE ON LA PLATA. NO MAJOR SHORTAGE SHOULD OCCUR, HOWEVER, SOME LATE SEASON SHORTAGES WILL EXIST, UNLESS SUMMER RAINFALL IS MUCH ABOVE NORMAL.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY" ISSUED BY: SOIL CONSERVATION SERVICE

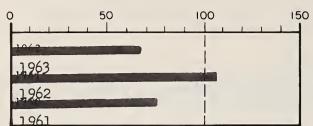
F. A. Mark, State Conservationist,
Colorado
Benny Martin, Area Conservationist,
Monte Vista, Colorado
E. A. Nicholson, Area Conservationist,
Grand Junction, Colorado

C. A. Tidwell, State Conservationist
New Mexico

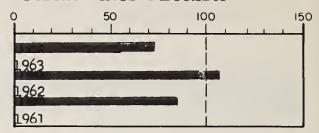
J. B. Christy, Area Conservationist Albuquerque, New Mexico

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

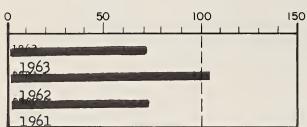
SAN JUAN



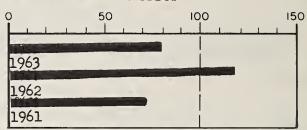
PIEDRA-PINOS-FLORIDA



DOLORES



ANIMAS-LA PLATA



RESERVOIR STORAGE (1,000 AC. FT.)

PRECIPITATION

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	I5 YEAR AVERAGE 1943 - 57
Groundhog	21.7 126.3	5.5	6.0	7.0
Vallecito		55.3	64.0	40.7

STATION	AUGUST NOVE AVE.		WINTER		
Dolores	4.75	+•37	2.28		
San Juan	7.10	-•59	4.14		

MEASURED FIRST OF MONTH

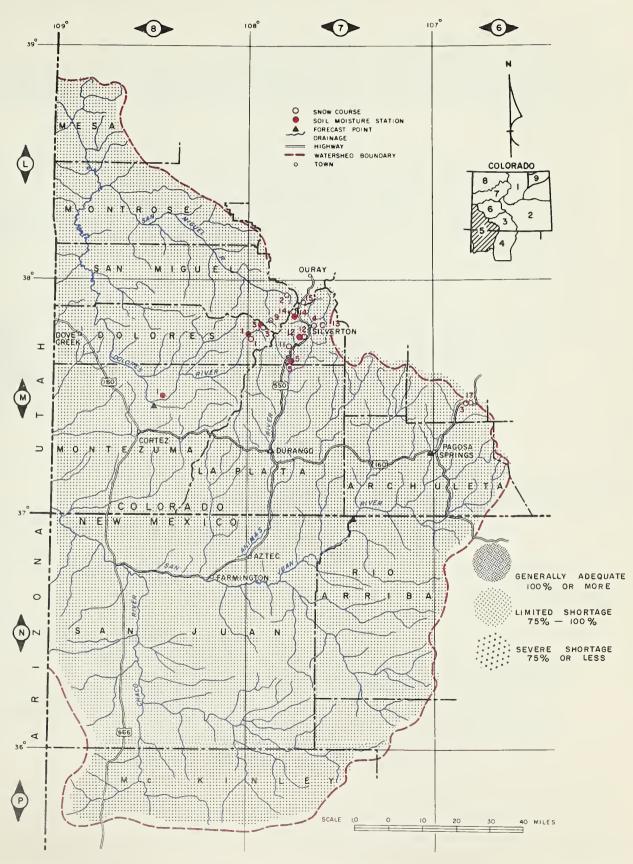
PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

SOIL MOISTURE

STREAMFLOW FORECAST (1,000 AC. FT.)

					APRIL THROUGH SEPTEMBER				
STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)	STREAM AND STATION	FORECAST APRIL - SEPT.	THIS YEAR % AVERAGE		
Cascade Dolores Lizzard Head Mineral Creek Molas Lake Rico ** Out of ord	9.4	6.9 * 7.1 3.8 0.5 5.8	6.6 7.2 9.1 3.9 2.9 9.7	9.1 5.2 6.9 3.3 3.5 6.9	Animas at Durango Dolores at Dolores Florida near Hermosa LaPlata at Hesperus Los Pinos Near Bayfield* Piedra Creek near Piedra San Juan at Rosa, N. M.	335 225 49 23 170 128 410	71 81 81 82 77 61 70	279 60 28 220 186 587	

SAN MIGUEL - DOLORES - ANIMAS - SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO



SNOW		CURRE	NT INFORMA	TION	PASTR	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE	
SAN JUAN RIVER Chama Divide (B)(New Mexico) Chamita (B) (New Mexico) Upper San Juan (Colorado) Wolf Creek Pass (B) Wolf Creek Summit ANIMAS RIVER Cascade Howardville Ironton Park (B) Mineral Creek Molas Lake Red Mountain Pass Silverton Sub-Station Spud Mountain DOLORES RIVER Lizzard Head Rico Telluride Trout Lake	6N2 6N3 6M3 6M1 6M17 7M5 7M13 7M6 7M14 7M12 6M19 7M4 7M11 7M3 7M1 7M2 7M9	3-28 3-27 3-29 3-29 3-29 3-29 3-29 3-29 3-29 3-29	0 17 64 55 64 25 38 31 38 36 80 12 58 48 7 19 37	0.0 6.4 23.3 18.3 20.0 6.5 9.9 10.2 11.3 9.5 26.2 3.4 18.2 17.5 3.0 5.0 12.3	3.5 10.5 40.8 40.8 38.1 15.8 14.9 14.2 17.7 18.8 39.0 8.9 30.7 21.9 10.2 7.3 15.5	1.7 8.5 33.9 30.5 29.5* 12.1 11.4* 13.7* 30.3* 5.1 24.3* 17.6 7.7 6.8 13.2*

NOTE: • - 1943 - 57 (ADJUSTED AVERAGES)

NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

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GUNNISON RIVER WATERSHED IN COLORADO

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SNOW COVER



THE GUNNISON RIVER BASIN NOW HAS ABOUT 73% OF NORMAL SNOW COVER. THIS SEEMS TO BE A MAJIC NUMBER. MOST AREAS HAVE SIMILAR SNOW COVER. THE ONE AREA THAT IS IMPROVED IS THE UNCOMPANGRE. HERE SNOW COVER IS 88% OF NORMAL.

SOIL MOISTURE



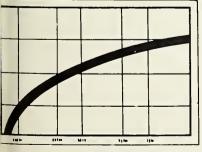
SOIL MOISTURE IS NOW UP TO NEARLY NORMAL. THEY ARE STILL MUCH BELOW LAST YEAR AT THIS TIME. THIS CONDITION WILL SLIGHTLY REDUCE RUNOFF FROM THE SNOW PACK. VALLEY SOIL IS REPORTED AS NEARLY NORMAL.

- RESERVOIR STORAGE



TAYLOR PARK RESERVOIR HAS WELL ABOVE NORMAL CARRYOVER STORAGE AND WILL BE A GOOD SUPPLEMENTAL WATER SUPPLY FOR THIS AREA. THIS COULD TEND TO REDUCE LATE SEASON SHORTAGES.

EXPECTED STREAMFLOW

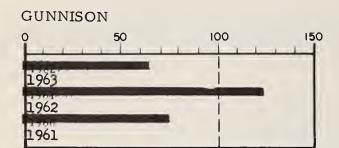


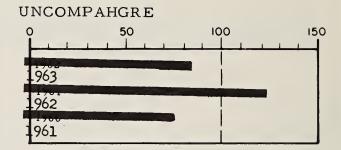
RUNOFF FORECASTS ON THE GUNNISON AND SURFACE ARE JUST UNDER 70% OF THE 15 YEAR NORMAL. LIGHT SNOW PACK AND DRY SOIL WOULD INDICATE THAT SOME SHORTAGES WILL OCCUR ESPECIALLY IN THE LATE SEASON. THE UNCOMPANGE WATERSHED IS BETTER WITH ABOUT 83% OF RUNOFF EXPECTED. SOME OF THE BEST SNOW COVER IN THE STATE IS LOCATED NEAR THE HEADWATERS OF THIS RIVER.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

ISSUED BY: SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE





RESERVOIR STORAGE (1,000 AC. FT.)

I5 YEAR AVERAGE 1943 - 57 USABLE CAPACITY THIS YEAR LAST YEAR RESERVOIR 81.5 106.2 82.0 62.2 Taylor

MEASURED	FIRST	OF	MONTH	

SOIL	MOISTURE
	MODE TOTAL

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)	
King Maroon Mineral Creek Placita	3.3 5.9 5.7 9.3	1.5 3.0 3.8 4.7	2.1 5.4 3.9 7.0	1.6 3.5 3.3 6.7	

PRECIPITATION

STATION	NOVE	THROUGH MBER DEP.	winter Dec-Febe		
Gunnison	3.01 -	1.49	2.61	+.03	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

STREAMFLOW FORECAST (1,000 AC. FT. APRIL THROUGH SEPTEMBER

AFRIL THROUGH SEP	IEMDER		
STREAM AND STATION	FORECAST APRIL - SEPT.		AVERAGE 1943-57
Funnison nr. Grand Jct. Surface Cr. at Cedaredge Uncompangre at Colona	950 12 120	69 1 67 83	386 18 145

GUNNISON RIVER WATERSHED IN COLORADO



SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE LAST YEAR	
GUNNISON RIVER Alexander Lake Black Mesa Blue Mesa Cochetopa Pass (B) Crested Butte Keystone Lake City Long Draw Mesa Lakes (B) Monarch Pass (B) McClure Pass Mineral Creek (B) North Lost Trail (B) Park Cone Park Reservoir Porphyry Creek Trickle Divide (B) Tomichi UNCOMPAHGRE RIVER Ironton Park Lizzard Head Red Mountain Pass (B) Telluride Trout Lake	7K3 7L5 7L5 7L2 6L6 6L1 7K4 6L4 7K4 6L4 7K1 6L2 7K6 6L3 7K5 6L7 7M6 7M3 7M15 7M9	3-28 3-25 3-29 3-27 3-25 3-26 3-25 3-28 3-28 3-25 3-25 3-25 3-25 3-25 3-25 3-28 3-28 3-28 3-28 3-28 3-28 3-28 3-28	48 47 20 20 37 48 18 19 37 42 39 38 34 30 52 46 55 35 31 48 80 19 37	13.6 14.8 5.5 5.2 11.8 15.7 6.0 5.5 11.0 13.9 12.5 11.3 10.9 8.4 15.5 15.0 16.5 12.2 10.2 17.5 26.2 5.0 12.3	31.0 10.2 5.7 19.8 31.0 9.4 20.4 22.7 26.9 17.7 26.2 16.3 34.8 22.1 37.4 14.4 14.2 21.9 39.0 7.3 15.5	22.8 5.4* 15.3 8.6* 17.4 18.6 15.8* 14.1* 15.7 12.3 26.8 17.1 28.9 13.1 17.6 30.3* 6.8 13.2*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)

NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
Jack N. Washichek and Don W. McAndrew
Soil Conservation Service
Colorado State University
Ft. Collins, Colorado

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WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

COLORADO RIVER WATERSHED IN COLORADO

as of APRIL 1, 1963

DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



THE SNOW PACK WAS NOT INCREASED MUCH DURING MARCH. CURRENT FIGURES INDICATE ONLY ABOUT 72% OF NORMAL SNOW PACK. MUCH OF THE ENTIRE COLORADO BASIN IS IN SIMILAR CONDITION. THE ROARING FORK AND PLATEAU BASIN COVERED IN THIS REPORT ARE ALSO SUBSTANTIALLY BELOW NORMAL.

SOIL MOISTURE

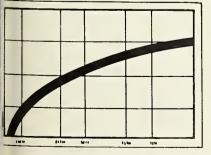


SOIL MOISTURE CONDITIONS AT THE HIGH ELEVATIONS IS STILL MUCH BELOW LAST YEAR AND ONLY ONE OF THE NINE STATIONS IS ABOVE NORMAL. SNOW IN THE VICINITY OF THE VAIL PASS SOIL MOISTURE STATION HAS STARTED TO MELT, THUS INCREASING THE SOIL MOISTURE IN THIS AREA.

RESERVOIR STORAGE



GREEN MOUNTAIN RESERVOIR IS STARTING TO FILL. BUT IS MUCH BELOW NORMAL FOR THIS DATE. IT NOW CON-TAINS 10,300 ACRE FEET COMPARED TO A NORMAL OF 57,700 ACRE FEET. STORAGE FOR DOWN STREAM USE ON THE COLO-RADO IS LIMITED AND WILL HAVE LITTLE AFFECT ON WATER SUPPLIES.



EXPECTED STREAMFLOW TED RUNOFF FROM THE COLORADO RIVER AND TRI-BUTARIES WILL ALL BE AROUND 70% OF THE 15 YEAR AVERAGE. THE HIGHEST OF THESE STREAMS WILL BE WILLOW CREEK WITH 77% OF NORMAL. LATE SEASON SHORTAGES WILL EXIST IN ALL IRRIGATED AREAS WITH DIRECT FLOW RIGHTS. LATE SEASON FLOWS WILL BE MOST CRITICAL UNLESS SUMMER RAIN-FALL IS MUCH ABOVE NORMAL.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

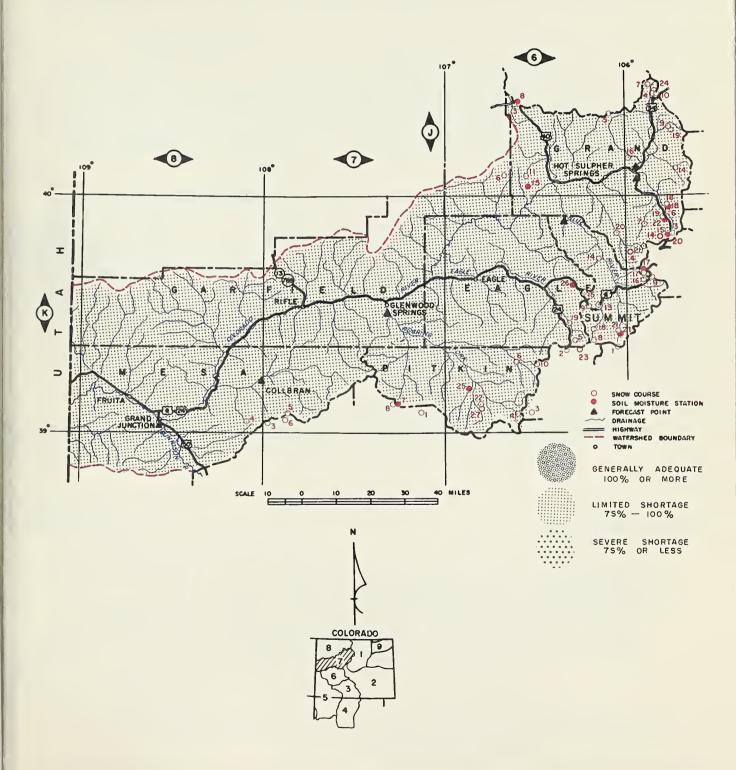
ISSUED BY: SOIL CONSERVATION SERVICE

NOW		CURRENT INFORMATION			PAST R	PAST RECORD	
		DATE	SNOW	WATER	WATER CONTENT (INCHES)		
SNOW COURSE	NO.	SURVEY	(INCHES)	(INCHES)	LAST YEAR		
COLORADO RIVER (UPPER) Arrow Berthoud Pass Berthoud Summit Blue River Cooper Hill Fiddlers Gulch Fremont Pass Frisco Glen Mar Ranch Gore Pass Granby Grand Lake Grizzly Peak Hoosier Pass (B) Jones Pass Lake Irene Lapland Lulu Lynx Pass McKenzie Gulch Middle Fork Camp Ground Milner Pass Monarch Lake North Inlet Grand Lake Pando Phantom Valley Ranch Creek Shrine Pass Snake River Summit Ranch Tennessee Pass Vail Pass Vasquez Creek Willow Creek Pass ROARING FORK RIVER Aspen Independence Pass Tunnel Ivanhoe Lift McClure Pass Nast North Lost Trail PLATEAU CREEK Alexander (B) Mesa Lakes Park Reservoir (B) Trickle Divide	5K6 5K3 5K14 6K21 6K23 6K5 6K8 6K13 6K20 6J11 5J16 5J19 5K9 6K1 5J10 5K7 5J7 6K6 6K28 5K4 5J24 5J14 5J9 6K19 5K18 6K9 5K16 6K2 6K15 7J22 6K4 6K10 7K27 7K8 6K6 7K1 7K3 7K4 7K6 7K5	3-26 3-26 3-26 3-27 4-01 3-28 3-27 3-28 3-27 3-28 3-27 3-28 3-27 3-28 3-26 3-27 3-26 3-26 3-26 3-27 3-26 3-26 3-27 3-28 3-28 3-27 3-28 3-28 3-27 3-28 3-28 3-27 3-28 3-28 3-28 3-29 3-28 3-28 3-28 3-28 3-28 3-28 3-28 3-28	DEPTH	CONTENT	14.2 18.7 22.1 9.9 14.1 18.8 21.1 8.2 11.1 14.7 9.5 10.8 21.3 17.3 31.6 12.4 25.3 19.2 11.0 17.2 10.7 9.5 11.0 13.2 10.9 19.8 23.5 15.2 18.0 22.4 26.5 23.1 30.3 26.9 6.1 26.2		

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

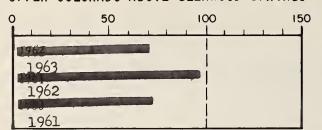
This Report Prepared by
Jack N. Washichek and Don W. McAndrew
Soil Conservation Service
Colorado State University
Ft. Collins, Colorado

COLORADO RIVER WATERSHED IN COLORADO

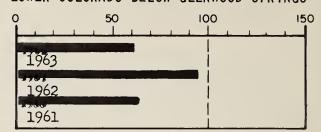


WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

UPPER COLORADO ABOVE GLENWOOD SPRINGS



LOWER COLORADO BELOW GLENWOOD SPRINGS



F .)

RESERVOIR STORAGE (1,000 AC. FT.								
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	I5 YEAR AVERAGE 1943 - 57				
Granby* Green Mt.	465.5	360.3 10.3	334.4 38.9	197.5 57.7				

PRECIPITATION

STATION	AUGUST T NOVEN AVE.	winter Dec-Feber.		
Upper Colorado Lower Colorado	3.62 3.89	4.16 2.95		

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

MEASURED FIRST OF MONTH

SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Berthoud Pass Blue River Gore Maroon Muddy Pass Placita Ranch Creek Vail Pass Vasquez	3.9 4.2 4.9 5.9 11.1 9.3 8.7 12.3 11.0	2.1 3.0 5.3 4.7 4.9 9.2	3.3 3.3 4.8 5.4 10.5 7.0 6.7 8.8	2.4 2.7 3.5 6.5 6.7 5.3 8.9 7.9

ALL PROFILES 4 FEET DEEP

STREAMFLOW FORECAST (1,000 AC. FT.) APRIL THROUGH SEPTEMBER

THE THEO VOIL OUT				
		AST A	THIS YEAR % VERAGE	AVERAGE 1943-57
Blue River abv. Green Mt. Colo. R. nr. Granby (4) Colo. R. at Glenwood Srrg Plateau Cr. near Collbran Roaring Fork at Fl. Spgs. Williams Fork nr. Parshall Willow near Granby	(5) (6)	195 163 106 35 550 51 31	69 60 69 61 68 65 65	290 235 1546 57 803 78 44

- (4) Observed flow plus diversions by Adams tunnel and Grand River ditch plus change in storage in Granby Reservoir.
- (5) Observed flow plus the changes as indicated in (4) plus Moffat Ditch.
- (6) Observed flow plus diversion through Twin Lakes tunnel.

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WATER SUPPLY OUTLOOK
FOR THE SOIL CONSERVATION DISTRICTS IN THE

YAMPA, WHITE, AND NORTH PLATTE RIVERS WATERSHEDS IN COLORADO

as of APRIL 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER ON THE WHITE RIVER DRAINAGE IS ONLY ABOUT ONE-HALF OF NORMAL FOR THIS DATE WHILE YAMPA AND NORTH PLATTE ARE ABOUT 75% OF NORMAL. THIS IS NOT SUFFICIENT SNOW COVER TO PRODUCE ADEQUATE WATER FOR THE BASINS. THERE IS LITTLE CHANCE THAT REMAINING SNOWS WILL BE SUFFICIENT TO BRING THE SNOW PACK TO NORMAL.

SOIL MOISTURE



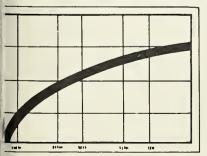
SOIL MOISTURE STATIONS INDICATE, WATER LEVEL IN THE SOIL IS STARTING TO INCREASE. THE LOWER ELEVATION SNOW COVER IS BEGINNING TO MELT WITH CURRENT SPRING WEATHER AND SOIL MANTLES ARE STARTING TO FILL. SOIL MOISTURE AT THE HIGHER ELEVATIONS HAS BEEN BELOW NORMAL ALL YEAR.

RESERVOIR STORAGE



THERE ARE NO MAJOR RESERVOIRS IN COLORADO ON THESE BASINS. THE DOWN STREAM RESERVOIRS IN WYOMING AND NEBRASKA CAN NOT BE EXPECTED TO INCREASE THEIR STORAGE TO ANY GREAT EXTENT.

EXPECTED STREAMFLOW

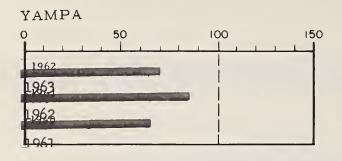


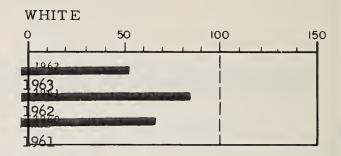
EXPECTED STREAMFLOW WILL BE MUCH BELOW NORMAL, HOWEVER, WATER REQUIREMENTS ARE LOW IN THIS AREA. NO REAL SEVERE SHORTAGE ARE ANTICIPATED UNTIL LATE IN THE GROWING SEASON. RUNOFF WILL RANGE FROM 57% ON THE LITTLE SNAKE AND WHITE TO 74% OF THE 15 YEAR AVERAGE ON THE ELK AND YAMPA.

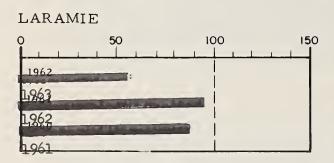
"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

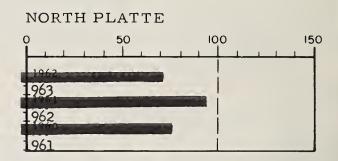
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WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE









SOIL MOISTURE

AVERAGE CAPACITY (INCHES) THIS YEAR LAST YEAR STATION (ALL PAST DATA) 16.0 Hahn's Peak 19.0 19.0 6.6 Laramie Road 12.4 6.0 6.5 Muddy Pass 11.1 5.3 10.5 5.3 Two Mile 9.1 4.2 6.6 9.5 6.5 Willow Pass 9.5 4.9

ALL PROFILES 4 FEET DEEP

STREAMFLOW FORECAST (1,000 AC. FT.)

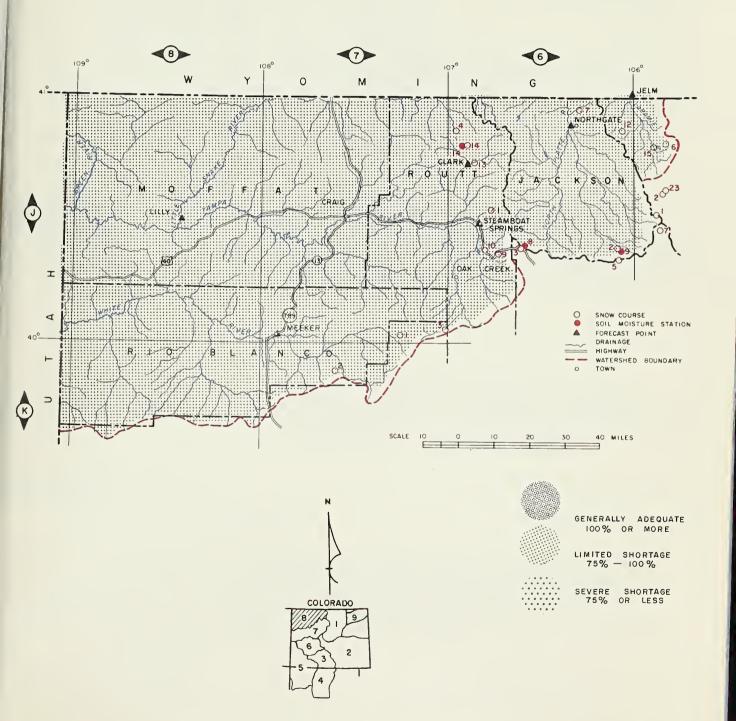
APRIL THROUGH SEPT	APRIL THROUGH SEPTEMBER								
STREAM AND STATION	FORECAST APRIL - SEPT.		AVERAGE 1943-57						
Elk at Clark	160	74	215						
Laramie at Jelm	75	67	113						
Little Snake at Lilly	200	57	350						
White at Meeker	190	57	335						
Yampa at Steamboat Sprgs.	210	74	283						

PRECIPITATION

STATION	AUGUST THROUGH NOVEMBER AVE. DEP.	winter AVE. DEP. Dec-Feb
North Platte	2.1381	1.1916
White	3.4346	2.3339
Yampa	3.74 +1.58	3.5678

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

YAMPA, WHITE, AND NORTH PLATTE RIVERS WATERSHEDS IN COLORADO



_ DAS.F.INCO N NEBP 1961

SNOW		CURRE	NT INFORMA	ATION	PAST	RECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCH:	ES)
NORTH PLATTE RIVER Cameron Pass Columbine Lodge Deadman Hill (B)	5J1 6J3 5J6	3-27 3-28 4-01	54 59	20.1	38.9 30.0 17.2	24.9 24.7 16.8
McIntyre (B) Northgate Park View Roach (B)	5J15 6J7 6J2	3-28 3-28 3-27 3-27 3-27	39 31 13 24 48	13.1 7.1 4.4 7.2 11.8	15.8 8.9 13.4 26.0	11.4* 6.2* 9.7 20.0
Willow Creek Pass (B) YAMPA RIVER Bear River Clark Columbine Lodge (B)	7J3 6J13 6J3	3-27 3-30 3-28	31 29 19 59	7.9 5.7 22.1	14.7 14.9 30.0	13.6
Dry Lake Elk River Hahn's Peak Lynx Pass (B)		3-28 3-29 3-29 3-28 3-28	44 37 27 32	15.1 11.5 8.9 9.2 19.1	24.9 21.3 18.2 19.2 32.2	21.0 18.2 12.7
Rabbit Ears Yampa View WHITE RIVER Burro Mountain	6J10 7K2	3-28 3-26	56 35 36	9.4	18.2	28.5* 15.5*
Rio Blanco	7J1	3–27	33	10.7	17.8	16.7

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

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Colorado State University
Ft. Collins, Colorado

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WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

LOWER SOUTH PLATTE RIVER WATERSHED IN COLORADO

as of
APRIL 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



WATER CONTENT OF THE MOUNTAIN SNOW PACK THROUGH-OUT THE SOUTH PLATTE WATERSHED AVERAGES 78% OF THE 1943-57 AVERAGE. THE SNOW PACK THIS YEAR DIDN'T IN-CREASE AS IT USUALLY DOES DURING MARCH. MANY OF THE SNOW COURSES BELOW 10,000 FEET OF ELEVATION DECREASED DURING LAST MONTH. HIGH ELEVATION COURSES ARE PRESENT-LY ABOUT 80% OF AVERAGE.

SOIL MOISTURE



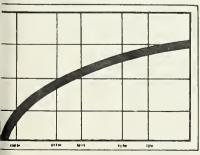
WATERSHED SOILS AT THE HIGH MOUNTAIN ELEVATIONS REMAIN DRIER THAN NORMAL. THIS CONDITION DOES NOT IMPROVE THE BELOW NORMAL STREAMFLOW ANTICIPATED THIS COMING SEASON. VALLEY SOIL MOISTURE IS REPORTED AS FAIR TO GOOD THROUGHOUT THE GREELEY, FORT MORGAN AND STERLING AREAS.

RESERVOIR STORAGE



WATER STORED IN RESERVOIRS IN THE LOWER REACHES
OF THE SOUTH PLATTE REMAINS ABOVE NORMAL AT THIS TIME.
THIS WATER WILL BE OF HELP TO ALLEVIATE SHORTAGES DUE
TO BELOW NORMAL STREAMFLOW LATER THIS SUMMER.

EXPECTED STREAMFLOW



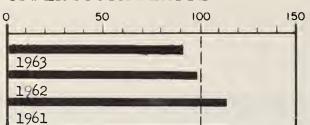
STREAM FLOW FOR THE PERIOD APRIL THROUGH SEPTEMBER 1963 IS EXPECTED TO RANGE FROM 73% OF NORMAL ON THE SAINT VRAIN TO 86% ON THE BIG THOMPSON. FORECASTS AS OF THIS DATE ARE BASED ON AVERAGE SNOWFALL AND PRECIPITATION DURING THE COMING MONTHS.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

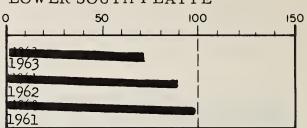
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WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

UPPER SOUTH PLATTE



LOWER SOUTH PLATTE



RESERVOIR STORAGE (1,000 AC. FT.)

SOIL MOISTURE

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57	STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Carter * Cheeseman Eleven Mile Empire Horsetooth * Jackson Lake Julesburg Point of Rocks Prewitt Riverside * Shorter Peri Carter and Hors of the Big Thom	etooth R		102.6 77.9 97.8 33.6 135.1 32.2 19.1 68.9 27.7 56.8	64.8 49.2 69.2 29.1 99.4 33.6 21.4 58.2 19.8 47.9	Alpine Camp Beaver Dam Feather Guard Station Hoop Creek Hoosier Pass Kenosha Pass Laramie Road Two Mile Clear Creek	6.9 7.1 10.1 6.9 4.9 7.8 4.4 12.4 9.1 9.5	4.4	4.7 5.2 5.3 4.1 3.5 6.0 2.3 	3.5 3.4 4.1 3.5 2.4 4.2 1.9 6.6 5.3 5.3

MEASURED FIRST OF MONTH

STREAMFLOW FORECAST (1,000 AC. FT.)

PRECIPITATION

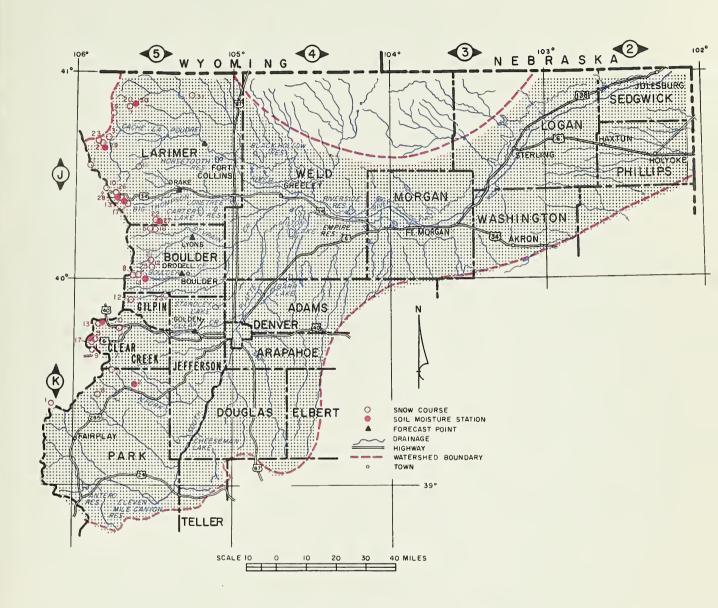
STATION	AUGUST THROUGH NOVEMBER AVE. DEP.		WINTER DEC-Febrer.		
Upper S. Pl. Lower So. Pl.	2.28	-2.55 -2.16		33 18	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

APRIL THROUGH SEPT	ЕМВ	ER		
STREAM AND STATION	AF	ECAST PRIL - EPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57
Big Thompson at Drake (2) Boulder at Orodell Cache La Poudre at Canon(1) Clear Creek at Golden (3) Saint Vrain at Lyons	.)	91 45 146 114 61	86 82 77 83 73	106 55 189 137 84

- (1) Observed flow minus diversions from Michigan, Colorado and Laramie rivers, plus diversions for irrigation and municipal use above station.
- (2) Observed flow plus by-pass to power plants.
- (3) Observed flow minus diversions through Jones Tunnel.

LOWER SOUTH PLATTE RIVER WATERSHED IN COLORADO







GENERALLY ADEQUATE

LIMITED SHORTAGE 75% - 100%

SEVERE SHORTAGE 75% OR LESS

SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE LAST YEAR	
SOUTH PLATTE RIVER AND TRIBUTARIES Baltimore Berthoud Falls Big South Boulder Falls Cameron Pass Chambers Lake Copeland Lake Deadman Hill Deer Ridge Empire Geneva Park Grizzly Peak (B) Hidden Valley Hoosier Pass Hour Glass Lake Jefferson Creek Lake Irene (B) Long's Peak Lost Lake Loveland Pass Loveland Lift No. 1 Pine Creek Red Feather Two Mile University Camp Ward Wild Basin	5K13 5J3 5J25 5J1 5J2 5J18 5J6 5J17 5K10 5K11 5K9 5J13 6K1 5J11 5K8 5J10 5J22 5J23 5K5 5J23	4-01 3-28 3-01 3-30 3-27 3-28 3-28 3-30 3-28 3-26 3-31 3-30 3-27 3-27 3-29 3-29	16 28 54 22 10 39 17 17 8 50 35 32 25 52 33 39 62 33 44 42 36	5.4 10.8 2.4 13.6 20.1 7.9 3.2 13.1 4.5 5.9 2.2 16.4 10.0 9.1 10.5 10.1 10.5 12.0 18.9 0.9 6.1 13.2 16.1 7.3 9.6	9.1 13.2 2.1 12.5 38.9 10.1 4.0 17.2 9.4 9.7 21.3 16.1 15.3 6.9 11.7 31.7 11.8 13.1 19.2 30.7 2.3 7.6 23.3 21.5 6.8 10.1	14.6* 2.7 15.4* 24.9 8.8 5.3* 16.8 5.9* 7.8* 4.2* 18.9 12.4 13.1 9.2 9.8 22.9 11.7* 11.8* 15.8 8.8 15.3* 24.5 7.1* 15.0

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

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The following organizations cooperate in snow surveys for the Colorado, Platte, Arkansas and Rio Grande watersheds. Many other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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Colorado State Engineer
New Mexico State Engineer
Nebraska State Engineer
Colorado Experiment Station
Rocky Mountain Forest and Range Experiment Station

FEDERAL

Department of Agriculture

Forest Service Soil Conservation Service

Department of Interior

Bureau of Reclamation Geological Survey National Park Service Indian Service

Department of Commerce

Weather Bureau

War Department

Army Engineer Corps

Atomic Energy Commission

INVESTOR OWNED UTILITIES

Colorado Public Service Company Western Colorado Power Company Public Service Company of New Mexico

MUNICIPALITIES

City of Denver City of Boulder

WATER USERS ORGANIZATIONS

Arkansas Valley Ditch Association Colorado River Water Conservation District

IRRIGATION PROJECTS

Farmers Reservoir and Irrigation Company
San Luis Valley Irrigation District
Santa Maria Reservoir Company
Costilla Land Company
Uncompangre Valley Water Users' Association
Twin Lakes Reservoir and Canal Company

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"